

diameter of not larger than 3000 nm.

31. An abrasive comprising cerium oxide particles, wherein a crystallite of said cerium oxide particles having a crystal grain boundaries has a maximum diameter not larger than 600 nm.

32. The abrasive of Claim 30, wherein said crystallite of said cerium oxide particles has a maximum diameter of not larger than 600 nm.

33. The abrasive of Claim 30, wherein said cerium oxide particles have pores.

34. The abrasive of Claim 30, wherein said cerium oxide particles have a porosity of from 10 to 30% as determined from the ratio of a true density measured with a pycnometer to a theoretical density determined by X-ray Rietvelt analysis.

35. The abrasive of Claim 30, wherein said cerium oxide particles have a pore volume of from 0.2 to 0.05cm<sup>3</sup>/g as measured by B.J.H. method.

36. The abrasive of Claim 30, wherein said cerium oxide particles have a bulk density not higher than 6.5 g/cm<sup>3</sup>.

37. The abrasive of Claim 30 further comprising a medium, wherein said medium is water.

38. The abrasive of Claim 30 further comprising a dispersant.

39. The abrasive of Claim 38, wherein said dispersant is at least one selected from a water-soluble organic polymer, a water-soluble anionic surfactant, a water-soluble nonionic surfactant and water-soluble amine.

40. An abrasive as claimed in claim 39 wherein said dispersant is a polyacrylic acid type polymer.

41. The abrasive of Claim 30 wherein cerium oxide particles with a diameter not smaller than  $1\mu\text{m}$  occupies at least 0.1% by weight of the total weight of the cerium oxide particles.

42. The abrasive of Claim 30, wherein said cerium oxide particles having said crystal grain boundary have a property of polishing a target member while collapsing.

43. The abrasive of Claim 30, wherein said cerium oxide particles having said crystal grain boundary have a property of polishing a target member while forming new surfaces not coming into contact with said medium.

44. The abrasive of Claim 30, wherein a content of the cerium oxide particles having a particle diameter not smaller than 0.5  $\mu\text{m}$  after polishing, measured by centrifugal sedimentation after polishing a predetermined target substrate, is in a ratio of not more than 0.8 with respect to that content before polishing.

45. The abrasive of Claim 30, wherein cerium oxide particle diameter at D90% by volume measured by laser diffraction after a target substrate has been polished is in a ratio of from 0.4 to 09 with respect to that particle diameter before polishing.

46. A method of polishing a predetermined substrate using an abrasive as claimed in 30.

47. A method of polishing a substrate as claimed in claim 46, wherein strength of the substrate is larger than the

breaking strength of grain boundary of an oxidation cerium particles.

48. The method of polishing the substrate as claimed in claim 46 wherein said predetermined substrate is a semiconductor chip with a silica film formed thereon.

49. A manufacturing method of a semiconductor device comprising the step of polishing a semiconductor chip having a silica film formed thereon with an abrasive as claimed in claim 30.--